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A NOTE ON THE CULTIVATION OF *TRICHOMONAS INTESTINALIS*

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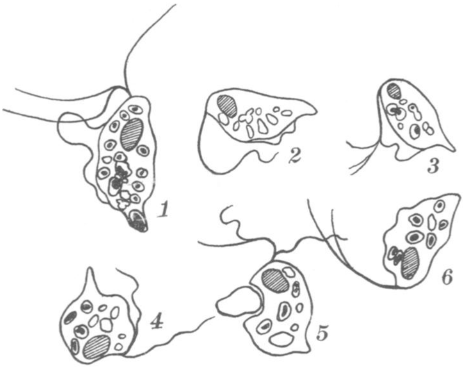
In 1915 Lynch reported the cultivation of a trichomonad secured from the gums and vagina of a negress suffering from an acute gingivitis and catarrhal vaginitis, while in 1917 Ohira and Noguchi report the cultivation of trichomonads from the dental tartar. So far as I know, no report of the cultivation of these flagellates from the intestinal tract has been made.

In making a parasitological examination of the large and small intestine of a white male removed at autopsy, the colon was found to contain a considerable quantity of very soft, light yellow fecal material. Microscopical examination of this fecal material demonstrated not over two trichomonads per slide, each slide being prepared from a single loopful of feces. Loopfuls of feces were transferred to of physiological saline, acid broth (plus 1) and neutral broth, both of the latter being made from meat extract.

After three days incubation at 37° C., the supernatant fluid and sediment of bacteria and fecal debris was examined for the trichomonads. None were found in any of the inoculations made into broth, while in the sediment of the inoculations made into saline, several trichomonads were found in each field, the numbers being markedly increased over those observed in the feces from which the inoculations were made. After ten days growth, transfers of single loopfuls of sediment were made to fresh tubes of unsterilized fecal suspensions in saline, the feces employed being from a person free from this flagellate. By this time none of the broth tubes had shown a growth. After the second transfer the numbers of flagellates continued to increase, as many as a dozen being observable in a single microscopic field. After eighteen days in the second culture they were still abundant in the sediment and transfers were made to another series of unsterilized fecal suspensions. Uninoculated controls of this fecal suspension were also incubated. In the third transfer the organisms have multiplied extensively, but are apparently not as numerous as in the second transfer. The cultures are now in the fourteenth day of the third transfer, and the trichomonads are still abundant. No flagellates have been found in the control tube.

A number of the trichomonads are shown in the accompanying illustration, which was made from films fixed in sublimate alcohol and stained with Heidenhain's iron hematoxylin. Before smearing the organisms were concentrated and mixed with dilute serum water to insure fixation. Well fixed individuals show a rather elongated, pear-shaped body, blunt at the anterior extremity, pointed at the posterior. The large nucleus is visible at the anterior end, while the body cavity is filled with vacuoles containing bacteria in various stages of digestion. In well spread individuals three flagella are observable arising from the anterior end, while from the same situation arises an undulating membrane which extends towards the posterior extremity, but apparently does not reach to the tip. An axostyle has not been observed. Individuals vary in length from 12 to 18μ and in breadth from 6 to 9μ, depending largely on the position in which fixed. These characteristics indicate the organism probably belongs to the genus Trichomonas, although the absence of an axostyle does not confirm this diagnosis. If the failure to observe an axostyle is due to technical errors, the species is undoubtedly *T. intestinalis.*



Group of *Trichomonas intestinalis*

To date in none of the cultures have I observed cysts of any character, so that the conflicting observations of Wenyon (1910) and those of Lynch (1916) upon cyst formation in this species cannot be reconciled.

In the case from which these trichomonads were derived the autopsy revealed an aortic insufficiency, a diffuse arteriosclerosis of the kidneys, to which death was due, and a diffuse, pseudo-membranous colitis, extending from the ilio-cecal valve to the rectum.

From these observations it would appear that the recognition of intestinal flagellates might be facilitated by incubating fecal suspensions in saline for several days before examining, rather than by the direct examination of fresh feces. This procedure might prove of value should it be ascertained these organisms possess pathological significance.

I shall attempt the isolation and propagation of this flagellate in pure culture with a suspension of a single bacterial species as food. It would appear that such a combination would be necessary since they appear to require the ingestion and intracellular digestion of microorganisms for nourishment.

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